Mobile electronics

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Dometic THE SIGN OF COMFORT

WAECO mobile solutions

Home-like comfort away from home

With professional electronic accessories

From battery care to mobile power supply

When travelling, enjoy the same convenience you have at home – with mobile electronics by Dometic WAECO.

The range includes all you need for a perfect on-board system. Battery care products extend the service life of your on-board battery. IU0U battery chargers provide optimum charging characteristics for all types of batteries. Inverters give you the extra convenience of a mobile 230-volt power socket. Feel free to take your favourite gadgets from home and run them from the DC supply. Voltage converters turn 12-volts into 24-volts (or vice versa), helping you to make more flexible use of your mobile equipment. The high-performance BLUTEC 40D marine generator makes you independent of mains hook-up and battery power. It supplies energy for air conditioners, refrigerators and more.

Contents, specifications and availability are subject to change serving the technical improvement.

Battery care

WAECO PerfectBattery accessories keep batteries in ship-shape condition, even after long periods of standstill. By means of recharging and float charging, they prevent premature battery ageing.

WAECO PerfectBattery Pages 96 – 97

PerfectBattery BR 12

Charging converters

WAECO PerfectCharge IU charging converters – ideal for voltage stabilisation and for charging the leisure battery while driving.

WAECO PerfectCharge Pages 98 – 99

PerfectCharge DC 08

Battery chargers

A comprehensive range covering a wide scope of applications: WAECO PerfectCharge automatic chargers with IU0U or IU characteristics have been designed for fast and gentle charging of gel, AGM and wet batteries.

WAECO PerfectCharge Pages 100 – 101

PerfectCharge IU152A

Inverters

230 volts on board – for laptops, espresso machines and more. Depending on the type of appliance to be supplied you can choose a WAECO inverter with modified sine voltage, or opt for a pure sine wave inverter.

WAECO PocketPower Pages 116 – 117
WAECO PerfectPower Pages 118 – 121
WAECO SinePower Pages 122 – 127

SinePower MSP 352

Voltage converters

They combine what was never intended to be combined: 12-volt appliances and 24-volt onboard batteries – and vice versa. The converters can also be used for battery charging.

WAECO PerfectPower

Pages 128 – 129

PerfectPower DCDC10

Mobile energy supply

High-performance battery jump starter with many extra functions. High-quality, all-round tool for workshop, garage and mobile use.

WAECO PowerPack

Pages 130 – 131

PowerPack MPS 500

Generators

The mobile power generator by Dometic provides energy where mains power is unavailable.

Dometic Generators

Pages 132 – 133

Dometic TEC 29

Contents, specifications and availability are subject to change serving the technical improvement.

Battery refresher

A refreshing cure for your battery

Everyone dreams of owning an "eternal battery", one that will never let them down. Their dream is reality now, thanks to the battery refresher. The super-compact appliance reduces sulphate build-up, which is so often the cause of premature failure in lead cell batteries. Even apparently useless batteries can be given a new lease of life. The refresher can be permanently connected to the battery. It treats the battery to an invigorating training programme – fully automatically, while you are on the move.

When you switch the ignition off, the integrated voltage monitor deactivates the appliance.

The battery refresher is suitable for all types of 12-volts lead batteries. Ideal for passenger cars, it can also be used on motorhomes and boats. Given the long periods of standstill, the batteries in those vehicles are particularly susceptible to sulphate build-up.

WAECO PerfectBattery BR 12 **3.28**

Battery refresher 12 volts
Extends the service life of batteries

Features & functions

- Simply connected to the battery's minus and plus poles
- Extends the battery's service life by reducing sulphate build-up
- Reactivates apparently useless batteries by eliminating sulphate crystal build-ups
- Prevents cold start problems
- Maintains the full charging capacity for several years
- Reduces hazardous waste and helps the environment
- Suitable for batteries up to 300 Ah
- Ideal for cars, motorhomes, boats

Battery voltage	12 volts DC
Cut-in voltage	> 12.6 volts ± 0.2 volts
Stand-by current	< 0.2 mA
Dimensions (W x H x D)	100 x 67 x 25 mm
Weight	0.12 kg
Test mark	e-approved to Automotive EMC Directive

Product	Ref. No.
PerfectBattery BR 12, 12 volts	MBR-100-12

A long life for lead acid batteries (wet, gel and AGM)

Battery conditioner

Training for the battery

Three functions: conditioning – charging – back-up

PerfectBattery BC 100 is an **inexpensive battery conditioner that maintains lead batteries** from 10 to 150 Ah by gently simulating driving. As a result, the full capacity can be maintained even after months of standstill. Battery conditioners are ideal for summer vehicles such as soft-tops, motor cycles and motorhomes.

The BC 100 conditioner offers two useful extra functions. It serves as a **battery charger** for lead batteries (motor cycles, vintage cars) and can also be used as a **back-up power supply** unit. When a vehicle's starter battery has to be removed, the conditioner temporarily takes over the power supply to the appliances. In this way, stored data – e. g. in car radios – can be retained.

WAECO PerfectBattery BC 100 **3.28**

Battery conditioner, 12 volts
Three functions in one unit: conditioning, charging, back-up

Features & functions

- For service and maintenance of all 12-volts lead batteries
- Simple connection to the cigarette lighter socket, or with battery clamps included in the delivery kit
- For boats, motorhomes and cars
- Short-circuit and reverse pole protection
- Conditions batteries with a capacity from 10 Ah to 150 Ah
- Charges batteries with a capacity from 10 to 30 Ah

Battery connections	1
Input voltage	230 volts AC
Input voltage range	180 to 253 volts AC / 50 to 60 Hz
End-of charging voltage	13.8 volts DC
Float charging voltage	13.0 volts DC
Charging indicator	3 LEDs
Maximum charging current	1.0 A
Operating temperature	0°C to +50°C
Dimensions (W x H x D)	70 x 100 x 60 mm
Weight	0.45 kg
Quality features	Overload and short circuit protection
Test mark	CE

Product	Ref. No.
PerfectBattery BC 100, 12 volts	MBCC-100

Fitness training for 12-volt batteries

Bridges long periods of standstill

Can also be used as battery charger and back-up power supply

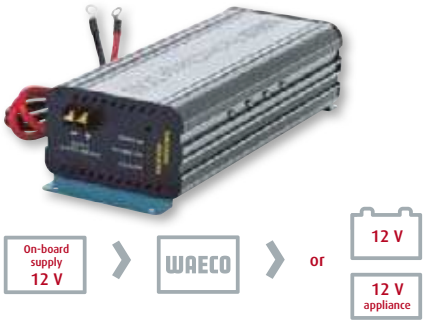
Contents, specifications and availability are subject to change serving the technical improvement.

Contents, specifications and availability are subject to change serving the technical improvement.

IU-charging converters

A stable voltage for sensitive appliances

Advanced electronic equipment, ready for 12-volt operation – many yacht and boat owners take navigation devices or LCD monitors on board to run them from the boat battery. Unfortunately, it often doesn't work that way. This is because sensitive electric appliances require a **constant and stable power supply.** Voltage fluctuations may lead to failure or even damage the appliances. With a **PerfectCharge IU charging converter** you are on the safe side with this respect. It **stabilises the voltage supply** and compensates over- and undervoltage in a range from 8 – 16 volts. Simply integrate the unit into the wiring of the consumer, it'll work a treat ...



... the compact PerfectCharge IU charging converters are also a blessing for the leisure battery. Quite often, the electric generator does not supply sufficient power to give them a complete charge when the engine is running.

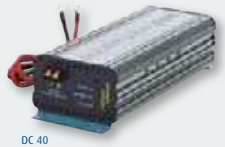
The reason is insufficient cabling (supply cables too long, cross section too small). A charging converter raises the charging voltage to 14.2 volts which ensures optimal charging during the cruise. The converter can be switched on or off by an external control signal, e.g. the D+ from the generator. You can also use a 12-volt switch.

WAECO PerfectCharge DC 08 / DC 20 / DC 40 — 3.16

Charging converters and battery chargers in three performance categories, 8 A, 20 A and 40 A
Ideal for voltage stabilisation and for charging the leisure battery while driving

DC 08

DC 20


DC 40

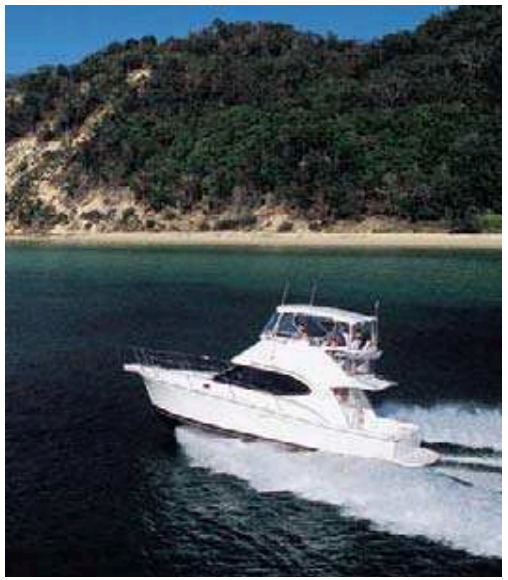
Features & functions

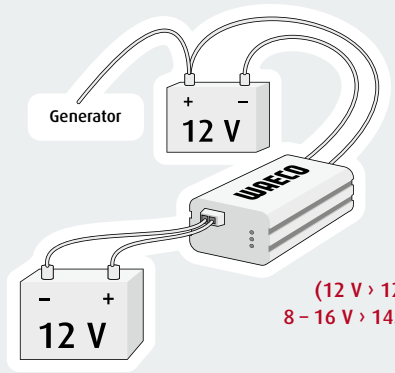
- › High energy efficiency
- › Electrically isolated output voltage
- › Clean output voltage
- › Parallel operation possible
- › IU battery charging curve
- › Additional ON/OFF input
- › Stabilises the battery/generator voltage
- › Stabilises the on-board power supply during engine start
- › EMC optimised for the automotive industry

	DC 08	DC 20	DC 40
Input voltage	12 volts DC		
Input voltage range	8 – 16 volts DC		
Output current	**8 A**	**20 A**	**40 A**
Output voltage	14.2 volts DC ±0.1 volts		
Energy efficiency	Up to 87%		
Ripple & Noise	20 mA		
Dimensions (W x H x D)	115 x 70 x 100 mm	115 x 70 x 160 mm	115 x 70 x 270 mm
Weight	0.75 kg	1.2 kg	2.1 kg
Quality features	Electrically isolated output voltage, wide input voltage range, high accuracy of the output voltage		
Test mark	e-approved to Automotive EMC Directive		

Stable voltage supply for sensitive 12-volt devices

Product	Ref. No.
PerfectCharge DC 08, 8 A, 12 volts » 12 volts	DC1212-08
PerfectCharge DC 20, 20 A, 12 volts » 12 volts	DC1212-20
PerfectCharge DC 40, 40 A, 12 volts » 12 volts	DC1212-40





Contents, specifications and availability are subject to change serving the technical improvement.

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IU0U chargers by WAECO

... give your batteries a longer life!

Starter batteries and leisure batteries are designed for different tasks. Starter batteries, in order to start the engine, must initially supply a high current level and will then serve as an energy buffer with smaller partial cycles. Supply or leisure batteries, by contrast, are charged and discharged at lower current levels for longer periods of time, which means they are subjected to significantly higher loads. **Correct charging is the key to success.**

IU0U battery chargers by WAECO give your batteries a longer life. They provide optimum charging for all types of leisure batteries (gel, AGM and wet), because they charge quickly and gently at the same time.

The comprehensive product offering ranges from inexpensive compact chargers to professional units for simultaneous charging of several batteries.

IU0U battery chargers – the benefits at a glance:

- **Fast and gentle charging** with IU0U charging characteristic
- **Suitable for all types of lead batteries** (gel, AGM and wet batteries)
- **High energy efficiency** with switch-mode technology
- **Stable voltage supply** without power fluctuations
- **Safe and secure operation:** overload and short-circuit protection
- **Compact design,** low weight
- **Easy installation**

IU/IU0U automatic chargers

Intelligent, portable battery chargers in three versions 6, 8 and 12 A. Versatile IU or IU0U charging characteristics for wet, gel and AGM batteries. Lightweight, compact and handy. High-quality design in aluminium/plastic.

WAECO PerfectCharge

Pages 104 – 105

PerfectCharge IU6 NEW!

IU0U automatic chargers

Super-compact, inexpensive battery chargers with maximum charging current ratings from 4 to 10 A. Designed for **fast and efficient recharging of batteries up to 100 Ah.** Ideal for permanent installation.

WAECO PerfectBattery

Pages 106 – 107

PerfectBattery BC 400

IU0U automatic chargers in premium quality

A new, trend-setting model generation that combines state-of-the-art charging technology with excellent user comfort. Winner of the coveted "Caravaning Design Award 2008/2009". Well-designed detail solution: the display is integrated in the unit at a 45° angle so that it can easily be checked from various positions.

Multi-stage IU0U charging characteristics ensure fast and gentle charging of all types of batteries. As double and triple chargers, the premium appliances can be used for simultaneous charging of several batteries. Supplied with IEC plugs to fit sockets across the whole of Europe. Features for easy installation: individually adjustable clip-on mounts, cable organiser, mounting plate. Overcharge protection, adjustable charging capacity, battery conditioning/refreshing function, sleep mode.

Available in various capacity ratings, for 12- and 24-volt batteries. Remote control and temperature sensor as optional accessories.

WAECO PerfectCharge

Pages 108 – 111

PerfectCharge IU 152A up to IU 452A NEW!

Contents, specifications and availability are subject to change serving the technical improvement.

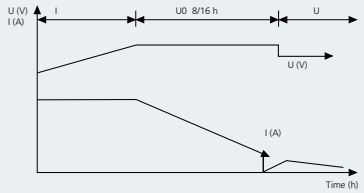
IU-/IU0U automatic chargers

Fast and gentle charging

Battery chargers are faced with tough challenges in mobile applications. Their task is to recharge the on-board batteries as quickly as possible, while power is constantly drawn from the leisure batteries for lights and other electrical appliances. Thanks to their multi-stage IU0U charging characteristics PerfectCharge automatic chargers take this task in their stride. Suitable for all types of batteries (gel, AGM and wet) they provide fast and gentle charging, prerequisite for a long battery life. The compact, high-performance battery chargers are available in various performance categories – ranging from a 6-amp IU charger for the starter battery to the new premium series, which provides many enhancements for extra comfort and convenience.

The output rating of your PerfectCharge battery charger depends on the capacity of your battery. To prevent battery damage manufacturers strongly recommend using a battery charger of adequate capacity. The charging current of the battery charger should be at least 10% of the battery capacity. This is the only way to ensure a battery-saving full charge in a reasonable period of time. If your battery has a capacity of 150 Ah, for example, you should use a unit with a charging current of at least 15 amps (PerfectCharge IU152A or above).

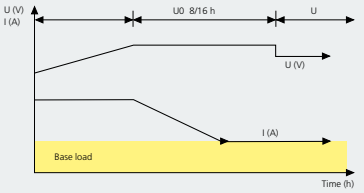
IU0U charging characteristics



This fast and gentle charging technology represents an extension of the well-proven IU charging curve.

It includes the additional time constant 0 and a further constant voltage U for compensation charging. As with IU charging characteristics, charging is initially performed with a constant current. When the gas development voltage has been reached, the voltage is maintained at the same level until the charging current has fallen to a minimum. At that point the charging voltage is reduced to the float charging level – the charging process is completed.

Limited time of the U0 phase

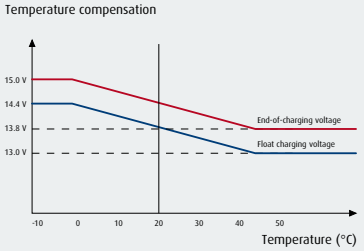


To prevent overcharging when power is drawn from the battery while charging, the duration of the U0 phase is limited.

Ideally, the system should switch from the main charging voltage U0 to the float charging voltage U when the battery is 100% charged. A good indication for a fully charged battery is a low current intake.

If an electrical appliance exerts a current load on the battery during the charging phase (e.g. when a light is on), the charging current will never reach the low current value required by the system to switch over to the U phase. As the U0 phase is limited to a finite time, the switch-over to the U phase occurs regardless of the charging voltage level. This makes it impossible to overcharge the battery.

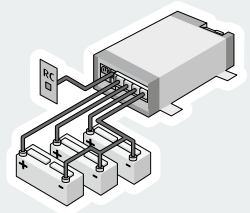
The advantages of a temperature sensor



A temperature sensor is recommended when battery charging takes place in varying or extreme ambient temperatures. This is because the optimal charging voltage for a battery largely depends on the temperature conditions. In cold batteries, for instance, the gas development voltage is higher than in warm batteries. The sensor is fitted on the battery or close to it and measures the temperature. Depending on the result, the battery charger adjusts the main charging and float charging voltage. At high temperatures the voltage is reduced to prevent battery gassing. At low temperatures the voltage is increased to improve the battery charge. The diagram shows how the temperature sensor adjusts the charging voltage to the temperature of the battery.

The TF-500 temperature sensor (p. 111) is available as an optional accessory for all PerfectCharge IU0U charger models of series IU152A to IU452A.

Simultaneous charging of several batteries



When two or more batteries are used independently of one another, the load on them will be different and so will the required extent of recharging.

This is taken into account by our double and triple charger models (series IU 152A to IU 452A, p. 110 – 111). These units feature two or three battery outputs, and an additional one for charging the starter battery.

The chargers incorporate diodes to divide the charging current and prevent charge compensation between the batteries. While charging the weaker battery is initially brought to the charge of the stronger one. Both (or all three) batteries are then charged at the same voltage level until the full charge is reached. Naturally, it is also possible to connect just one or two batteries to a double or triple charger.

Contents, specifications and availability are subject to change serving the technical improvement.

Contents, specifications and availability are subject to change serving the technical improvement.

Chargers for starter batteries

Portable power by WAECO

Here is professional help for the starter battery of your boat or yacht. WAECO PerfectCharge battery chargers offer a decisive advantage over conventional chargers: the IU charging characteristics. The battery is initially charged at a constant current and subsequently at a constant voltage. The IU 8 and IU 12 models give your battery an additional float charge, which qualifies them as IU0U chargers. This charging process is ideal for commonly used wet lead batteries as well as for gel and AGM batteries.

The highly functional portable battery chargers come in a high-quality aluminium/plastic cabinet. Available in three nominal charging current ratings, 6 A, 8 A and 12 A. Indispensable on board and handy to have at home, too.

Contents, specifications and availability are subject to change serving the technical improvement.

A firm hold on charging technology: WAECO PerfectCharge automatic chargers feature an ergonomically shaped carrying handle and are light weight for convenient handling.

Advanced WAECO design, highly functional down to the last detail: neat cable management instead of tangled cables, and a "garage" for battery clamps.

The new class of automatic chargers

Lightweight, compact, functional

WAECO PerfectCharge IU 6, IU 8, IU 12 **3.16**

IU or IU0U automatic chargers

IU 6

IU 8

IU 12

Features & functions

- Realistic charging current specifications
- High efficiency (up to 85%) with advanced switch-mode technology
- Float charging after charge stop (IU 6: automatic charge stop)
- **IU charging characteristics, 3-step (IU 6) or 4-step (IU 8, IU 12)**

  Steps: 1. Battery check
  2. I-phase
  3. U-phase
  4. Float charging (IU 8 and IU 12)
- Safety circuits (protection against overload, overheat, short circuit, reverse poling)
- Automatic battery check (full or deep-discharged batteries won't be charged)
- Advanced, functional WAECO design with cable management
- High-grade finish in aluminium/plastic
- Especially handy and lightweight

	IU 6	IU 8	IU 12
Input voltage range	207 to 253 volts AC	207 to 253 volts AC	207 to 253 volts AC
Max. input current	1 A	1,5 A	2 A
Efficiency	**up to 80 %**	**up to 85 %**	**up to 85 %**
No-load power consumption	6 watts	10 watts	10 watts
Nominal battery voltage	12 volts DC	12 volts DC	12 volts DC
Nominal charging current	6 A	8 A	12 A
Charging characteristics	IU-autom., 3-steps	IU0U-autom., 4-steps	IU0U-autom., 4-steps
Ambient temperature	0°C to +40°C	0°C to +40°C	0°C to +40°C
Dimensions (W x H x D) mm	155 x 148 x 198	155 x 148 x 228	155 x 148 x 228
Weight	1.53 kg	1.92 kg	1.92 kg

Product	Ref. No.
PerfectCharge IU 6, 6 A	MBC-IU6
PerfectCharge IU 8, 8 A	MBC-IU8
PerfectCharge IU 12, 12 A	MBC-IU12

NEW

Suitable for wet, gel and AGM batteries

Advanced, lightweight and efficient technology

New, functional WAECO design

Ergonomically shaped carrying handle

Neat cable management, no tangled cables

Contents, specifications and availability are subject to change serving the technical improvement.

Battery charger and conditioner

A flying start – every time

The WAECO PerfectBattery BC 400 keeps starter and leisure batteries in perfect trim. It's a very compact unit designed for **fast and efficient full charging of batteries up to 50 Ah** – and even higher, where "recharging only" is required.

The **IU0U charging curve** guarantees optimum charging of all lead batteries. **Small and compact,** the BC400 is "just right" for permanent installation in motorhomes or boats. The unit has four **fixing attachments** for fast and easy fitting

WAECO PerfectBattery BC 400 — 3.28

Battery charger and conditioner for 12-volt batteries

Features & functions

- Lightweight and compact
- IU0U charging curve
- PVC cabinet
- 3 different connection cables
- Fast and efficient full charging of starter and leisure batteries up to 50 Ah
- Also suitable for recharging of batteries with larger capacity
- With 4 fixing attachments for permanent installation in smaller motorhomes or boats

Battery connections	1
Input voltage	230 volts AC
Input voltage range	180 – 253 volts AC / 50 – 60 Hz
End-of-charging voltage	14.4 volts
Float charging voltage	13.7 volts
Charging indicator	LED
Maximum charging current	2 A / 4 A (switch-over)
Operating temperature	–20°C to +50°C
Dimensions (W x H x D)	75 x 59 x 140 mm
Weight	0.5 kg
Quality features	Overload and short-circuit protection
Test mark	CE

Scope of delivery: basic unit, 3 adapter cables with various connections, operating instructions

Product	Ref. No.
PerfectBattery BC 400, 12 volts	MBCC-400

Super-compact IU0U battery charger

For battery capacities up to 50 Ah and higher

Ideal for permanent installation

Contents, specifications and availability are subject to change serving the technical improvement.

IU0U charging technology at entry-level prices

Compact units for fast and gentle charging

Great performance at a small price: the PerfectCharge "compact class" gives you all the benefits of IU0U charging. The well-proven battery chargers are ideal for charging leisure batteries up to 100 Ah on smaller boats. Featuring a large input voltage range, the battery chargers are able to compensate for mains fluctuations, a common annoyance in harbours. Advanced switch-mode design makes for high energy efficiency.

WAECO IU0U automatic chargers: perfect technology for charging leisure batteries up to 100 Ah

WAECO PerfectCharge IU 812 — 3.16

IU0U automatic charger, 12 volts
Optimal charging technology for 12-volt wet, gel and AGM batteries

Input voltage	230 volts AC
Input voltage range	180 to 253 volts AC / 50 to 60 Hz
Nominal battery voltage	12 volts DC
End-of-charging voltage	14.4 volts DC
Float charging voltage	13.6 volts DC
Maximum battery capacity	100 Ah
Charging curve	IU0U with limited IU0 phase
Maximum charging current	**8 A**
Operating temperature	0°C to +50°C
Dimensions (W x H x D)	120 x 70 x 200 mm
Weight	approx. 0.9 kg
Quality features	Overload and short-circuit protection
Test mark	CE

Product	Ref. No.
PerfectCharge IU 812, 8 A, 12 volts	808-012/1

Modified IU0U curve, optimised for charging gel, wet and AGM batteries

Prevents battery overcharging due to limited time of the IU0 phase

Quick charging without power fluctuations

Can also be used as mains adapter

WAECO PerfectCharge IU 1012 — 3.16

IU0U automatic charger, 12 volts with PFC
Optimal charging technology for 12-volt wet, gel and AGM batteries

Input voltage	110 to 230 volts AC
Input voltage range	90 to 253 volts AC / 50 to 60 Hz
Nominal battery voltage	12 volts DC
End-of-charging voltage	14.4 volts DC
Float charging voltage	13.6 volts DC
Maximum battery capacity	100 Ah
Charging curve	IU0U
Maximum charging current	**10 A**
Operating temperature range	–20°C to +50°C
Dimensions (W x H x D)	85 x 50 x 210 mm
Weight	approx. 1.0 kg
Qualtity features	Overload and short-circuit protection, Power Factor Correction (PFC)
Test mark	CE

Product	Ref. No.
PerfectCharge IU 1012, 10 A, 12 volts	910-012PFC

Modified IU0U curve optimised for charging gel, wet and AGM batteries

Quick charging without power fluctuations

Hassle-free operation in a range from 90 to 253 volts, thanks to PFC

Contents, specifications and availability are subject to change serving the technical improvement.

1. IEC socket
2. Output for temperature sensor
3. Output for remote control
4. DIP switches for configuring the charging characteristics
5. Battery + connections for simultaneous charging of up to 3 batteries
6. Battery – connection

DAME 2008 SPECIAL MENTION

Charging technology in a class of its own

Perfection in every detail

Premium quality, long service lives, award-winning design ... As if that wasn't enough, the new generation of PerfectCharge battery chargers offers perfection down to the last detail. It leaves nothing to be desired, each and every application is accounted for. New, multi-stage charging characteristics, configurable charging capacity, overcharging protection, additional conditioning/refreshing function, sleep mode, IEC socket, features for easy installation – all these and many other details add to the supreme quality of the new automatic WAECO battery chargers.

Display

A particularly well-designed detail including the main switch (ON/OFF/sleep mode) and three status LEDs to indicate the current charging level. The display is integrated in the unit at a 45° angle so that it can easily be checked from various positions.

DIP switches

Four DIP switches to select the optimum charging characteristics – this is where charging voltages and times can be configured for wet, gel and AGM batteries according to the manufacturer's specifications. Conditioning/refreshing of "low" batteries is possible, too.

Cable organiser

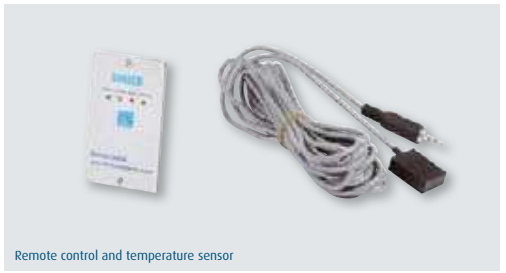
With cable guides ready at hand and all connections on one side, everything can be kept nice and neat.

Ventilator (sleep mode)

In sleep mode the charging capacity is cut by half and the ventilator is switched off. This allows for noiseless charging. The reduced power consumption ensures hassle-free operation at campsites with low circuit protection.

Clip-on mounts

Individually adjustable clip-on mounts permit adaptation to special installation requirements with perfect results. Additionally, each unit is supplied with a mounting plate, especially helpful for (vertical-) mounting the heavier units.



Remote control and temperature sensor

Accessories

Two extras to make the assets of the PerfectCharge automatic battery charger complete: the remote control enhances operating comfort. The temperature sensor is recommended when charging operations have to be carried out in widely varying or extremely high or low ambient temperatures. See further details on page 111.

Contents, specifications and availability are subject to change serving the technical improvement.

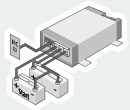
Contents, specifications and availability are subject to change serving the technical improvement.

WAECO PerfectCharge IU 152A

3.16

IU0U automatic charger 15 A/12 volts for mobile use
Ideal for motorhomes, motor and sailing yachts, ambulance and emergency service vehicles

230 V › 12 V



Battery outputs	One plus 1 A output for starter battery
Input voltage range	207 – 253 volts AC / 50 – 60 Hz
End-of-charging voltage	14.4 / 14.8 volts DC
Float charging voltage	13.8 volts DC
Maximum battery capacity	150 Ah
U0 phase limited at	8 h or 16 h
Maximum charging current	**15 A**
Operating temperature	0°C to +50°C
Dimensions (W x H x D)	175 x 91 x 310 mm
Weight	approx. 3.1 kg
Quality features	Overload and short circuit protection, sleep mode, individually adjustable clip-on mounts, mounting aid with cable organiser, exhaust air adapter
Test mark	CE
Type of protection	Equivalent to IP 21

Product	Ref. No.
PerfectCharge IU 152A, 15 A, 12 volts	2222500001
Optional extras	
Remote control	901-RC
Temperature sensor	TF-500

For simultaneous charging of 1 battery + starter battery

NEW

- Multi-stage IU0U curve, optimised for charging wet, gel and AGM batteries
- Prevent battery overcharging due to limited time of the U0 phase (8/16 h)
- Quick charging without power fluctuations
- Sleep mode
- Individually adjustable clip-on mounts
- Mounting aid with cable organiser
- Exhaust air adapter
- Remote control and temperature sensor as accessories

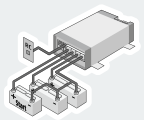
WAECO PerfectCharge IU 252A / IU 154A

IU0U automatic chargers 25 A/12 volts or 15 A/24 volts for mobile use
Ideal for motorhomes, motor and sailing yachts, ambulance and emergency service vehicles

IU252A

IU154A

230 V › 12 V
230 V › 24 V



	IU 252A	IU 154A
Battery outputs	Two plus one 1 A output for starter battery	
Input voltage range	207 – 253 volts AC / 50 – 60 Hz	
End-of-charging voltage	14.4 / 14.8 volts DC	28.8 / 29.6 volts DC
Float charging voltage	13.8 volts DC	27.6 volts DC
Maximum battery capacity	300 Ah	200 Ah
U0 phase limited at	8 h or 16 h	
Maximum charging current	**25 A**	**15 A**
Operating temperature	0°C to +50°C	
Dimensions (W x H x D)	208 x 96 x 332 mm	
Weight	approx. 3.8 kg	
Quality features	as for IU 152A	
Test mark	CE	
Type of protection	Equivalent to IP 21	

Product	Ref. No.
PerfectCharge IU 252A, 25 A, 12 volts	2222500002
PerfectCharge IU 154A, 15 A, 24 volts	2222500003
Optional extras	
Remote control	901-RC
Temperature sensor	TF-500

For simultaneous charging of 2 batteries + starter battery

WAECO PerfectCharge IU 452A / IU 254A

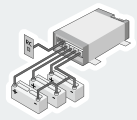
3.16

IU0U automatic chargers 45 A/12 volts or 25 A/24 volts for mobile use
Ideal for motorhomes, motor and sailing yachts, ambulance and emergency service vehicles

IU452A

IU254A

230 V › 12 V
230 V › 24 V



	IU 452A	IU 254A
Battery outputs	Three	Three
Input voltage range	207 – 253 volts AC / 50 – 60 Hz	
End-of-charging voltage	14.4 / 14.8 volts DC	28.8 / 29.6 volts DC
Float charging voltage	13.8 volts DC	27.6 volts DC
Maximum battery capacity	500 Ah	300 Ah
U0 phase limited at	8 h or 16 h	
Maximum charging current	**45 A**	**25 A**
Operating temperature	0°C to +50°C	
Dimensions (W x H x D)	208 x 96 x 418 mm	
Weight	approx. 5.5 kg	
Quality features	Overload and short circuit protection, sleep mode, individually adjustable clip-on mounts, mounting aid with cable organiser, exhaust air adapter	
Test mark	CE	
Type of protection	Equivalent to IP 21	

Product	Ref. No.
PerfectCharge IU 452A, 45 A, 12 volts	2222500004
PerfectCharge IU 254A, 25 A, 24 volts	2222500005
Optional extras	
Remote control	901-RC
Temperature sensor	TF-500

For simultaneous charging of 3 batteries

NEW

- Multi-stage IU0U curve, optimised for charging wet, gel and AGM batteries
- Prevent battery overcharging due to limited time of the U0 phase (8/16 h)
- Quick charging without power fluctuations
- Sleep mode
- Individually adjustable clip-on mounts
- Mounting aid with cable organiser
- Exhaust air adapter
- Remote control and temperature sensor as accessories

WAECO PerfectCharge Accessories

3.16

Remote control for IU0U automatic chargers of series IU152A to IU452A

Dimensions (W x D x H)	65 x 110 x 25 mm (22 mm built-in depth)
Quality features	LED for status indication, ON/OFF switch for sleep mode

Scope of delivery
Connection cable, approx. 5 m

Product	Ref. No.
Remote control	901-RC

Temperature sensor with 5 m supply cable

The IU0U chargers of series IU152A to IU452A can be equipped with a temperature sensor available as optional extra. The temperature sensor adjusts the charging voltage to the current battery temperature. This ensures a better charge at cold temperatures and prevents battery gassing at high temperatures.

Product	Ref. No.
Temperature sensor	TF-500

Contents, specifications and availability are subject to change serving the technical improvement.

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Inverters from XS to XXL

Mobile power sockets

Whether yacht, boat, car or motorhome – it makes sense to have a 230-volt socket on board your recreational vehicle. After all, enjoying your holiday means being able to use the electrical gadgets you are used to. The problem is they work on 230 volts, while your on-board leisure batteries generate 12 or 24 volts and their capacity is limited.

How do you turn 12 or 24 volts direct current into 230 volts alternating current? Quite simply, by using a **WAECO inverter.** The comprehensive range has been completely revised to suit specific applications. It accounts for all your needs – regardless of whether you "just" want a low-priced, compact unit to run your laptop, or an inverter for your microwave oven or espresso machine. All units feature outstanding quality and a contemporary, user-friendly design.

Most frequent applications include: charging of mobile phone batteries, cameras, torch lights, power tools, satellite aerials, DVD players, TV sets ...

Inverter or sine wave inverter?

Which inverter is the right one depends on the type and power rating of the appliance to be connected. The low-priced **WAECO PerfectPower** inverters generate a modified output voltage – sufficient for all electrical appliances with a wide input voltage range, such as hairdryers and vacuum cleaners.

Sensitive high-tech appliances with special start-up characteristics, e.g. audio/video devices, require a perfectly stable voltage supply. Fluctuations may cause failure or even damage them. **WAECO SinePower** sine wave inverters make sure that won't happen. They deliver a pure 230-volt input voltage, just like from a domestic mains supply. Modified or pure sine wave voltage supply is also provided by the small **PocketPower smart inverters,** designed for mobile operation of laptops and more.

Basically, the most demanding electrical appliance determines the choice of the inverter. A single device on board requiring a pure sine wave voltage is reason enough for you to opt for a sine wave inverter. You should also consider the starting current of the devices. Compressor refrigerators, for instance, can consume up to ten times more than their nominal power consumption.

Minimal power requirements for some electrical appliances

Device	Power rating	Quality of the output voltage
Coffee maker (filter)	800 – 1500 watts	modified sine wave voltage
Coffee maker (pads)	1200 – 1600 watts	pure sine wave voltage
Espresso machine	1200 – 1600 watts	pure sine wave voltage
Microwave oven	1000 – 1600 watts	modified sine wave voltage
Toaster	1000 – 1500 watts	modified sine wave voltage
Water kettle	1000 – 1500 watts	modified sine wave voltage
Reading lamp	50 – 100 watts	modified sine wave voltage
Energy-saving bulb	10 – 20 watts	pure sine wave voltage
Fluorescent tube	50 – 100 watts	pure sine wave voltage
Audio/video device	100 – 200 watts	pure sine wave voltage
Notebook computer	100 – 200 watts	modified sine wave voltage
Power drill/circular saw	500 – 1500 watts	modified sine wave voltage
Vacuum cleaner	1000 – 1600 watts	modified sine wave voltage
Electrical toothbrush	50 watts	pure sine wave voltage

Example:
› The largest electrical appliance on board is a toaster with a wattage of 1400 W.
› The technically most demanding appliance is an electrical toothbrush with a wattage of 50 W.

Our recommendation:
A sine wave inverter of at least 1400 watts:
WAECO SinePower MSP 1512

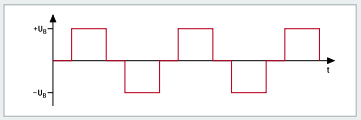
Alternatively:

WAECO PerfectPower PP 2002 for the toaster plus **SinePower MSP162** for the toothbrush

Pure or modified sine wave voltage?

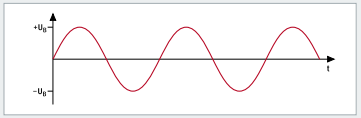
Modified sine wave voltage

The voltage produces a stepped curve simulating a sine wave.
The result: an output voltage of stable amplitude and frequency
› **WAECO PerfectPower inverters (p. 118 – 121)**



Pure sine wave voltage

The voltage is accurately controlled by a microprocessor.
The result: a clean sine wave voltage, like that from a home power socket
› **WAECO SinePower Sinus inverters (p. 122 – 127)**



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Selecting the right inverter

Other factors to be taken into consideration

Any idea yet which inverter from the WAECO range may be right for your application? Here are further details and criteria that ought to be taken into consideration when making your choice.

Does the battery match the inverter?

If you expect high performance from your inverter, you will need a high-capacity battery. We recommend a minimum capacity of 15 amp-hours per 100 watts inverter output. This ensures that the large currents can flow without voltage drop, thereby preventing excessive strain on the battery.

It's not only the short-time peak requirements – e.g. that of a microwave oven – that count. When calculating the battery capacity don't forget to take all the small electrical appliances into account that are switched on for longer periods of time.

Multiply the amperage of every single appliance with the number of hours it is usually switched on. This will give you the approximate battery capacity in amp-hours (Ah). To calculate the total amount drawn from the battery, simply add up the amounts for all electrical appliances and add a generous buffer.

Example:

Microwave oven (1500 W)	150 A x 0.1 h =	15.0 Ah
Lamp	15 A x 2.5 h =	37.5 Ah
TV set	3 A x 2.0 h =	6.0 Ah
...		...
...		...
Total capacity drawn		58.5 Ah

Our recommendation:

A battery with a capacity of 200 Ah, 30% of which would be utilised on a daily basis in our example.

What are the benefits of a mains priority circuit?

All larger inverters of the PerfectPower and SinePower series come with an integrated mains priority circuit, which automatically gives priority to mains power as soon as it is available. Consequently, the inverter is switched off and the battery saved as soon as your boat or motorhome has access to an external mains supply.

New: mains priority circuit with voltage synchronisation

All high-performance inverters of the WAECO SinePower series have been equipped with this technical highlight. For good reason: many 230-volt appliances connected to them depend on an uninterrupted power supply. Moreover, it is vital to ensure a "smooth" voltage switch-over, which is exactly what the **MSP702 to 2524 sine wave inverters** provide. In these units the inverter voltage is synchronised to match the mains voltage. The switchover takes place in a fraction of a second at the zero-voltage point, when the phases are synchronised.

Only this integrated solution – the combination of inverter and mains priority circuit – permits a smooth switch-over and provides optimum protection for electrical appliances.

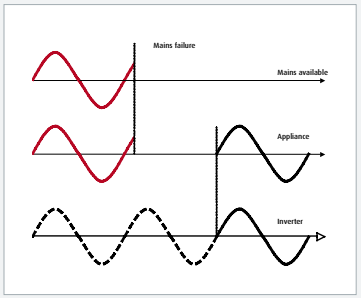
The inverters of the WAECO PerfectPower series PP1002 to PP2004 feature a mains priority circuit.

The inverters of the WAECO SinePower series MSP702 to MSP2524 feature the new mains priority circuit with voltage synchronisation.

Inverter voltage synchronisation for appliances with mains priority circuit

1. From inverter operation to mains supply
   The switchover from inverter operation (which means the 230-volt alternating voltage is generated by the battery) is effected within 8 seconds of mains voltage being available. As soon as the CE plug is connected to the external socket (campsite, harbour), the inverter compares frequency and phasing of both voltages. Within the 8 seconds mentioned above it matches the battery-generated voltage to that of the mains power source. When the phases are synchronised, the actual switchover takes place at the zero-voltage point so that reverse currents or malfunctions of any connected consumers are prevented.
2. From mains supply to inverter operation
   When mains power is available, the inverter is in stand-by mode and synchronised to match the mains voltage. In case of a mains failure the system automatically activates the inverter mode. The switch-over takes place at the zero voltage point so that connected appliances are not impaired.

› **WAECO SinePower sine wave inverters (p. 124 – 127)**



Contents, specifications and availability are subject to change serving the technical improvement.

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Inverters in pocket-size format

Mobile power for notebooks and more

Electronic maps, GPS and radar hook-up, DVD films – the notebook clearly belongs on board. Mobile computers work on limited battery power. So they are likely to let you down when you need them most. Connected in the line between the notebook and the cigarette lighter, PocketPower smart inverters put you on the safe side. The compact units take power from the 12-volt car battery to ensure hassle-free operation of your mobile computer by keeping its battery fully charged all the time. The inexpensive **PocketPower SI 102** generates a sine-wave-like 230-volt alternating voltage, which is perfectly adequate for many applications. The new **PocketPower TSI 102** is the best choice to ensure the safe and smooth operation of highly sensitive electrical appliances: its pure sine wave voltage, earthed safety socket and other comfort features place this product in a class of its own.

Handy, convenient, one-of-a-kind!

It's unique in the market: the new PocketPower TSI 102 is the first smart inverter that delivers a pure sine wave voltage and features an earthed safety socket. Treating yourself to this kind of "everyday luxury" means providing connected appliances with the best possible choice – and yourself, too ...

WAECO PocketPower SI 102 — 3.29

Smart inverter for mobile use
Turns 12 volts battery voltage into 230 volts AC

Features & functions

- Lightweight, small, handy
- For operation of laptops and other low-power appliances
- Low-voltage and over-voltage cut-off
- Overload and short-circuit protection
- With USB charging port
- Mounting bracket
- Euro socket

Nominal input voltage	12 volts DC (11 – 15 volts)
Output voltage/curve	230 volts AC/modified sine wave
Output voltage USB	5 volts / 0.5 A
Output frequency	50 Hz
No-load current input	< 0.4 A
Continuous power	**100 watts**
Peak power	200 watts
Low-voltage cut-off	10.8 volts
Cooling	Built-in fan
Energy efficiency	Up to 90%
Dimensions (W x H x D)	67 x 43 x 125 mm
Weight	282 g
Test mark	Certified to ECE-R10, CE

Product	Ref. No.
PocketPower SI 102, 100 watts, 12 volts	2222600001

NEW

- Ideal for mobile operation of laptops
- Lightweight and compact
- Smart features – small price!
- Cigarette lighter connection
- USB charging port
- LED status indication

WAECO PocketPower TSI 102 — 3.29

Smart inverter for mobile use
Turns 12 volts battery voltage into 230 volts AC

Features & functions

- Pure sine wave output voltage
- For operation of laptops and other low-power appliances
- Low-voltage and over-voltage cut-off
- Overload and short-circuit protection
- With USB charging port
- Mounting bracket
- Earthed safety socket

Nominal input voltage	12 volts DC (11 – 15 volts)
Output voltage/curve	230 volts AC/pure sine wave
Output voltage USB	5 volts, 0.5 A
Output frequency	50 Hz
No-load current input	< 0.8 A
Continuous power	**120 watts**
Peak power	200 watts
Low-voltage cut-off	10.8 volts
Cooling	Built-in fan
Energy efficiency	Up to 90%
Dimensions (W x H x D)	92 x 64 x 180 mm
Weight	650 g
Test mark	Certified to ECE-R10, CE

Product	Ref. No.
PocketPower TSI 102, 120 watts, 12 volts	2222600002

NEW

- Ideal for mobile operation of laptop computers
- Pure sine wave voltage
- Earthed safety socket
- Cigarette lighter connection
- USB charging port
- LED status indication

Contents, specifications and availability are subject to change serving the technical improvement.

Contents, specifications and availability are subject to change serving the technical improvement.

Inverters with modified sine wave voltage

230 volts for many commonly used appliances

Completely new outfit, top technology, additional comfort features – the popular WAECO inverter series has changed a lot. The units up to 550 watts are particularly light and compact. They turn 12- or 24-volt battery voltage into a sine-wave-like 230-volt alternating voltage, which is fully adequate for a multitude of applications.

The new inverter generation demonstrates great potential. Take installation for instance: adjustable clip-on mounts allow for perfect adaptation to individual needs. For those who are looking for extra comfort and prefer activating their inverter from the dashboard there is an additional outlet for an external switch.

Back:
ON/OFF switch and outlet for an external ON/OFF switch

Front:
Earthed safety socket and LEDs for function check

Mounting aid:
Individually adjustable clip-on mounts

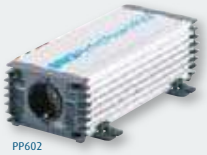
WAECO PerfectPower PP 152 / PP 154 / PP 402 / PP 404 / PP 602 / PP 604

3.18

Inverters 150 / 350 / 550 watts
Turn 12 or 24 volts battery voltage into 230 volts AC

PP152

PP402



PP602

	PP 152 / PP 154	PP 402 / PP 404	PP 602 / PP 604
Input voltage	12 volts DC (11 – 15 volts) oder 24 volts DC (22 – 30 volts)		
Output voltage/curve	230 volts AC/modified sine wave		
Output frequency	50 Hz		
No-load current input	0.25 A	0.25 A	0.25 A
Continuous power	150 watts	350 watts	550 watts
Peak power	350 watts	700 watts	1100 watts
Cooling	Built-in fan		
Efficiency	Up to 90%	Up to 90%	Up to 90%
Dimensions (W x H x D)	129 x 71 x 177 mm	129 x 71 x 192 mm	129 x 71 x 237 mm
Weight	approx. 0.84 kg	approx. 0.99 kg	approx. 1.4 kg
Quality features	Overload and short circuit protection, over-voltage and low-voltage cut-off, reverse pole protection by fuse, overheat cut-off, units can be switched on or off by external switch, individually adjustable clip-on mounts, PP152/PP154 with cigarette lighter plug		
Test marks	Certified to ECE-R10, CE		
Type of protection	Equivalent to IP 21		

NEW

Also suitable for appliances with PFC control

High peak output

Reverse pole protection by exchangeable fuse

Individually adjustable clip-on mounts

Can be switched on or off by external switch

PP152/PP154 with cigarette lighter plug

Product	Ref. No.
PerfectPower PP 152, 150 watts, 12 volts	PP152
PerfectPower PP 154, 150 watts, 24 volts	PP154
PerfectPower PP 402, 350 watts, 12 volts	PP402
PerfectPower PP 404, 350 watts, 24 volts	PP404
PerfectPower PP 602, 550 watts, 12 volts	PP602
PerfectPower PP 604, 550 watts, 24 volts	PP604

Contents, specifications and availability are subject to change serving the technical improvement.

Contents, specifications and availability are subject to change serving the technical improvement.

High-performance inverters

Modified sine wave voltage for powerful 230-volt appliances

Microwave ovens, toasters and vacuum cleaners are real "power burners", yet convenient to have on board. Operation is no problem either with a high-performance inverter from the new PerfectPower series described above. The 1000- or 2000-watt models generate a sine-wave-like 230-volt alternating voltage for particularly powerful appliances. User benefits add up to an all-round treat including perfect design, premium quality and a variety of technical extras for enhanced comfort.

Just take the **mains priority circuit** designed to switch over to mains power as soon as it is available. Or the soft-start function, which ensures gentle starting even where powerful appliances are concerned. Cable organisers, exhaust air adapter, outputs for remote control and external ON/OFF switch, adjustable mounts, mounting plate – the new PerfectPower high-performance inverters leave nothing to be desired!

Front with input and mains input fuse

Nice and neat: all cables on the back

WAECO PerfectPower PP 1002 / PP 1004 / PP 2002 / PP 2004

3.18

High-performance inverters with integrated mains priority circuit, 1000 / 2000 watts
Turn 12 or 24 volts battery voltage into 230 volts AC

PP1002

PP2002

	PP 1002 / PP 1004	PP 2002 / PP 2004
Input voltage	12 volts DC (11 to 15 volts) oder 24 volts DC (22 to 30 volts)	
Output voltage/curve	230 volts AC/modified sine wave	
Output frequency	50 Hz	
No-load current input	0.5 A / 0.6 A	
Continuous power	1000 watts	2000 watts
Peak power	2000 watts	4000 watts
Cooling	Built-in fan	Built-in fan
Efficiency	Up to 85%	Up to 85%
Mains priority	Integrated	Integrated
Mains input voltage	230 volts AC / 10 A	230 volts AC / 10 A
Dimensions (W x H x D)	176 x 95 x 338 mm	176 x 95 x 443 mm
Weight	approx. 3.5 kg	approx. 5 kg
Quality features	Mains priority circuit, overload and short circuit protection, outputs for remote control and external ON/OFF switch, individually adjustable clip-on mounts, cable organiser and mounting plate, AC connection cable with earthed safety plug	
Test marks	Certified to ECE-R10, CE	
Type of protection	Equivalent to IP 21	

Product	Ref. No.
PerfectPower PP 1002, 1000 watts, 12 volts	PP1002
PerfectPower PP 1004, 1000 watts, 24 volts	PP1004
PerfectPower PP 2002, 2000 watts, 12 volts	PP2002
PerfectPower PP 2004, 2000 watts, 24 volts	PP2004
Optional extras	
DC connection cable for PP 1002/1004, 35 cm	9102700005
DC connection cable for PP 2002/2004, 50 cm	9102700006
Remote control	MCR-9

NEW

- **With integrated mains priority circuit**
- **High peak output for especially powerful consumers**
- **Overload and short circuit protection**
- **Can be switched on or off by external switch**
- **Output for remote control**
- **Individually adjustable clip-on mounts**

Contents, specifications and availability are subject to change serving the technical improvement.

Contents, specifications and availability are subject to change serving the technical improvement.

Sine wave inverters

Pure sine wave voltage for sensitive appliances

The high-quality SinePower sine wave inverters feature the new, distinctive design of WAECO electronics, too. They turn 12- or 24-volt battery power into pure 230-volt AC, just like the power from your domestic sockets. This makes them ideal for electrical appliances that are sensitive to fluctuations in the on-board power supply.

Even the "smaller" models up to 350 watts provide plenty of comfort details: adjustable mounts, an output for connection of a remote control panel and an external ON/OFF switch, soft-start function.

A "garage" for 12- or 24-volt plugs (MSP162 and MSP164 models)

Back with output for remote control

Display with main switch and LEDs

Individually adjustable clip-on mounts

WAECO SinePower MSP 162 / MSP 164 / MSP 352 / MSP 354

3.30

Sine wave inverters 150 / 350 watts

Turn 12 or 24 volts battery voltage into pure 230 volts AC

MSP162

MSP352

	MSP 162 / MSP 164	MSP 352 / MSP 354
Input voltage	12 volts DC (11 – 15 volts) or 24 volts DC (22 – 30 volts)	
Output voltage/curve	230 volts AC/pure sine wave ∿	
Output frequency	50 Hz	
No-load current input	12 volts: 1.2 A, 24 volts: 0.6 A	
Continuous power	150 watts	350 watts
Peak power	300 watts	700 watts
Efficiency	Up to 90%	
Dimensions (W x H x W)	157 x 64 x 243 mm	
Weight	approx. 2 kg	approx. 2.2 kg
Quality features	Overload and short circuit protection, over-voltage and low-voltage cut-off, reverse pole protection by fuse, can be switched on or off by external switch, output for remote control, MSP162/MSP164 with 12- or 24-volt cigarette lighter plug	
Test marks	Certified to ECE-R10, CE	
Type of protection	Equivalent to IP 21	

Product	Ref. No.
SinePower MSP 162, 150 watts, 12 volts	MSP160-012
SinePower MSP 164, 150 watts, 24 volts	MSP160-024
SinePower MSP 352, 350 watts, 12 volts	MSP350-012
SinePower MSP 354, 350 watts, 24 volts	MSP350-024
Optional extra	
Remote control	MCR-9

NEW

- Microprocessor-controlled electronics for pure sine wave voltage
- Overload and short circuit protection
- Can be switched on or off by external switch
- Individually adjustable clip-on mounts
- Output for remote control

Contents, specifications and availability are subject to change serving the technical improvement.

Contents, specifications and availability are subject to change serving the technical improvement.

1. Battery – connection
2. Battery + connection
3. Switch for configuration
4. Mains input fuse
5. Output for remote control 1
6. Output for remote control 2 (RS232)
7. Mains input socket
8. Inverter output socket
9. Earth connection
10. Exhaust air adapter

DAME 2008 SPECIAL MENTION

Award-winning quality and design

Sine wave inverters up to 2500 watt

Prize-winning prior to market launch: hardly surprising, the new SinePower inverter series has been able to convince the most demanding jurors. With continuous power ratings of 700 watts and more, the larger models clearly come up to **professional standards.** Delivering pure sine wave voltage they are the best possible choice for highly sensitive and powerful electrical appliances. They meet industry standards and combine ultimate user comfort with even more technical features than their smaller "mates". These features include the **mains priority circuit with voltage synchronisation,** which gives priority to external mains power whenever it is available, and ensures uninterrupted voltage supply to the connected devices with a "smooth" switch-over. Or the automatic activation of the sleep mode when no 230-volt appliances are being operated – an energy-saving feature that reduces the strain on the on-board battery.

Display

A particularly well-designed detail including the main switch (ON/OFF/remote) and three LEDs to indicate the charging level, power output and input voltage range. The display is integrated in the unit at a 45° angle so that it can easily be checked from various positions.

Ventilator (sleep mode)

When no 230-volt appliance is operated the sine wave inverter automatically turns to sleep mode to reduce the strain on the vehicle battery. The ventilator is switched off, power consumption is reduced.

Cable organiser

With cable guides ready at hand and all connections on one side, everything can be kept nice and neat.

DIP switches

Using the DIP switches you can activate the power-save mode and set the desired output rating. When a connected appliance requires an output higher than the set value, the inverter will run in normal mode. When the output is lower than the one set it will run in the power-save mode.

Clip-on mounts

Individually adjustable clip-on mounts permit adaptation to special installation requirements with perfect results. Additionally, each unit is supplied with a mounting plate, especially helpful for (vertical) mounting the heavier units.

Accessories

Two remote control models make the assets of the SinePower sine wave inverters complete. You can choose the inexpensive standard model or opt for the high-end version, either is suitable for switchboard mounting.

Contents, specifications and availability are subject to change serving the technical improvement.

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WAECO SinePower MSP 702 / MSP 704 / MSP 1012 / MSP 1024 / MSP 1512 / MSP 1524

3.30

Sine wave inverters 700 / 1000 / 1500 watts

Turn 12 or 24 volts battery voltage into pure 230 volts AC

MSP 702

MSP 1012

MSP 1512

	MSP 702 / MSP 704	MSP 1012 / MSP 1024	MSP 1512 / MSP 1524
Input voltage	12 volts DC (10.5 – 15 volts) or 24 volts DC (21 – 30 volts)		
Output voltage/curve	230 volts AC/pure sine wave ∿		
Output frequency	50 Hz		
Sleep mode current input	0.25/0.15 A	0.25/0.15 A	0.28/0.15 A
No-load current input	1.2/0.6 A	1.25/0.65 A	1.4/0.7 A
Continuous power	**700 watts**	**1000 watts**	**1500 watts**
Peak power	1400 watts	2000 watts	3000 watts
Efficiency up to	90%/92%	90%/93%	90%/93%
Dimensions (W x H x D mm)	190 x 90 x 308	225 x 117 x 435	225 x 117 x 465
Weight	approx. 5.5 kg	7.6 kg	8.4 kg
Quality features	Integrated mains priority circuit with voltage synchronisation, over-voltage and low-voltage cut-off, overload and short circuit protection, outputs for remote control and external ON/OFF switch, adapter for heat dissipation hose, IEC socket/plug, individually adjustable clip-on mounts, cable organiser and mounting plate, three-colour LED for status indication, microprocessor-controlled output voltage, sleep-mode function, AC connection cable with earthed safety plug		
Test marks	Certified to ECE-R10, CE		
Type of protection	Equivalent to IP 21		

NEW

Microprocessor-controlled electronics for pure sine wave voltage

Integrated mains priority circuit with voltage synchronisation

Overload and short circuit protection

RS232 output for remote control or computer and output for connection of an external switch

Individually adjustable clip-on mounts

Product	Ref. No.
SinePower MSP 702, 700 watts, 12 volts	MSP700-012
SinePower MSP 704, 700 watts, 24 volts	MSP700-024
SinePower MSP 1012, 1000 watts, 12 volts	MSP1000-012
SinePower MSP 1024, 1000 watts, 24 volts	MSP1000-024
SinePower MSP 1512, 1500 watts, 12 volts	MSP1500-012
SinePower MSP 1524, 1500 watts, 24 volts	MSP1500-024
Optional extras	
DC connection cable for MSP 702/704, 25 cm	9102700001
DC connection cable for MSP 1012/1024 and MSP 1512/1524, 35 cm	9102700002

WAECO SinePower MSP 2012 / MSP 2024 / MSP 2512 / MSP 2524

3.30

Sine wave inverters 2000 watts / 2500 watts

Turn 12 or 24 volts battery voltage into pure 230 volts AC

MSP2012

MSP2512

	MSP 2012 / MSP 2024	MSP 2512 / MSP 2524
Input voltage	12 volts DC (10,5 to 15 volts) or 24 volts DC (21 to 30 volts)	
Output voltage/curve	230 volts AC/pure sine wave ∿	
Output frequency	50 Hz	
Sleep mode current input	0.6/0.3 A	0.6/0.35 A
No-load current input	2.3/1.1 A	2.4/1.5 A
Continuous power	**2000 watts**	**2500 watts**
Peak power	4000 watts	5000 watts
Efficiency up to	90%/93%	90%/93%
Dimensions (W x H x D mm)	349 x 116 x 516	349 x 166 x 546
Weight	approx. 15.5 kg	16.9 kg
Quality features	Integrated mains priority circuit with voltage synchronisation, over-voltage and low-voltage cut-off, overload and short circuit protection, outputs for remote control and external ON/OFF switch, adapter for heat dissipation hose, IEC socket/plug, individually adjustable clip-on mounts, cable organiser and mounting plate, three-colour LED for status indication, microprocessor-controlled output voltage, sleep-mode function, AC connection cable with earthed safety plug	
Test marks	Certified to ECE-R10, CE	
Type of protection	Equivalent to IP-21	

NEW

Microprocessor-controlled electronics for pure sine wave voltage

Integrated mains priority circuit with voltage synchronisation

Overload and short circuit protection

RS232 output for remote control or computer and output for connection of an external switch

Individually adjustable clip-on mounts

Product	Ref. No.
SinePower MSP 2012, 2000 watts, 12 volts	MSP2000-012
SinePower MSP 2024, 2000 watts, 24 volts	MSP2000-024
SinePower MSP 2512, 2500 watts, 12 volts	MSP2500-012
SinePower MSP 2524, 2500 watts, 24 volts	MSP2500-024
Optional extras	
DC connection cable for MSP 2012/2024, 50 cm	9102700003
DC connection cable for MSP 2512/2524, 70 cm	9102700004

WAECO SinePower Accessories

3.30

Remote controls for sine wave inverters

	MCR-7 (MSP 702 to MSP 2524)	**MCR-9** (MSP 162 to MSP 2524)
Dimensions	130 x 120 x 25 mm (W x H x D)	58 x 72 x 28 mm (W x H x D)
Weioght	400 g	40 g
Cable length	7.5 m	7.5 m
Quality features	Low-voltage, over-voltage, overheat and overload indicated by red LEDs, stand-by and power on indicated by green LEDs	Power on indicated by red LED

Two models to choose from

Both remote controls are suitable for switchboard mounting

Product	Ref. No.
Comfort remote control	MCR-7
Standard remote control	MCR-9

Contents, specifications and availability are subject to change serving the technical improvement.

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Voltage converters for universal use

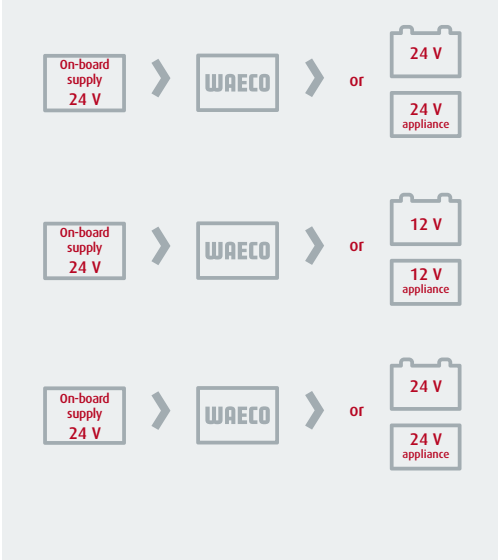
The perfect link between vehicle battery and appliance

They combine what was never intended to be combined. If the 12-volt navigation system is powered by the 24-volt board battery and the 24-volt fleet management computer easily copes with a 12-volt supply, there's bound to be a PerfectPower voltage converter somewhere along the line.

In these units, the input voltage is electrically isolated from the output voltage to compensate for under- and over-voltage on the input side.

Due to this feature, the voltage converters meet the highest demands for **voltage stability** and **operating safety.** This makes them ideal for sensitive appliances or use in safety-conscious areas, e.g. hazardous goods transport.

PerfectPower voltage converters have an electronically regulated output voltage, to which they owe their **extra function as a high-quality IU charger.** Moreover, several converters **can be used in parallel.**



WAECO PerfectPower DCDC 10 / DCDC 20 / DCDC 40

3.18

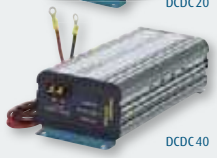
Voltage converters 10, 20 or 40 A

DCDC 10

DCDC 20

DCDC 10

DCDC 20


DCDC 40

Features & Functions

- High energy efficiency
- Electrically isolated output voltage
- Clean output voltage
- Parallel operation possible
- IU battery charging curve
- Additional ON/OFF input
- Stabilises the battery/generator voltage
- Stabilises the on-board power supply during engine start
- EMC optimised for the automotive industry

	DCDC 10	DCDC 20
Nominal input voltage	12 volts DC	12 volts DC
Input voltage range	8 to 16 volts DC	8 to 16 volts DC
Output current	10 A	20 A
Output voltage	27.6 ±0.1 volts	27.6 ±0.1 volts
Energy efficiency	87%	87%
Ripple & Noise	40 mA	40 mA
Dimensions (W x H x D)	115 x 70 x 140 mm	115 x 70 x 240 mm
Weight	1.0 kg	1.9 kg
Test mark	e-approved to Automotive EMC Directive	

Product	Ref. No.
PerfectPower DCDC 10, 10 A, 12 volts » 24 volts	DC1224-10
PerfectPower DCDC 20, 20 A, 12 volts » 24 volts	DC1224-20

	DCDC 10
Nominal input voltage	24 volts DC
Input voltage range	20 to 32 volts DC
Output current	10 A
Output voltage	27.6 ±0.1 volts
Energy efficiency	87%
Ripple & Noise	40 mA
Dimensions (W x H x D)	115 x 70 x 140 mm
Weight	1.0 kg
Test mark	e-approved to Automotive EMC Directive

Product	Ref. No.
PerfectPower DCDC 10, 10 A, 24 volts » 24 volts	DC2424-10

	DCDC 20	DCDC40
Nominal input voltage	24 volts DC	24 volts DC
Input voltage range	20 to 32 volts DC	20 to 32 volts DC
Output current	20 A	40 A
Output voltage	13.8 ±0.1 volts	13.8 ±0.1 volts
Energy efficiency	87%	87%
Ripple & Noise	20 mA	20 mA
Dimensions (W x H x D)	115 x 70 x 140 mm	115 x 70 x 240 mm
Weight	1.0 kg	1.9 kg
Test mark	e-approved to Automotive EMC Directive	

Product	Ref. No.
PerfectPower DCDC 20, 20 A, 24 volts » 12 volts	DC2412-20
PerfectPower DCDC 40, 40 A, 24 volts » 12 volts	DC2412-40

Ideal for sensitive appliances

Can also be used as battery chargers

To increase capacity, several converters can be used in parallel

Ideal for larger motorhomes with 12- or 24-volt starter battery and 12- or 24-volt leisure battery

Contents, specifications and availability are subject to change serving the technical improvement.

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Battery jump starter and more

Handy all-round tool on the move

With a PowerPack MPS 500 on board you are well prepared for whatever might come. When you have a flat battery, the powerful multi-functional jump starter gets your vehicle up and running in no time at all. At a short-time starting current of 400 amps, it has enough power to jump-start even large-capacity Diesel engines. Your crew will appreciate the integrated 12-volt socket, which can be used to operate or recharge coolers, compressors and air pumps. There's a second output with various voltage options for CD players and radios, plus a USB port for recharging of mobile phones, iPods® and digital cameras. An integrated work lamp, which can also be used to illuminate dark niches and crannies, adds the finishing touch to this advanced multifunctional unit.

WAECO PowerPack MPS 500 — 3.20

Multi-functional battery jump starter – high-quality all-round tool on the move

Features & functions

- Starting aid function (400 A short-time)
- Practical stowage compartment for accessories such as mains adapter, jump starter cable, etc.
- Energy supply with 4.5 volts, 6 volts, 9 volts, 12 volts output
- Parking position for battery clamps in the carrying handle
- USB port for charging mobile phones, PDAs, etc.
- High-quality design in aluminium/plastic
- Can also be used on moist grounds, e.g. on lawns (base section water-proof up to 7 cm height)

Max. starting current	400 A short-time
Output voltages	4.5 volts, 6 volts, 9 volts, 12 volts 5 volts (USB)
Max. continuous current	**10 A at 12 volts** **1 A** at 4.5 volts, 6 volts, 9 volts **0.5 A (USB)**
Lead gel battery	12 volts/18 Ah, maintenance-free
Dimensions (W x H x D)	252 x 295 x 243 mm
Weight	10.5 kg

Scope of delivery:
PowerPack MPS 500, 230 V mains adapter, DC cable, jump starter cable operating instructions

Product	Ref. No.
PowerPack MPS 500	PS-500-12

Powerful jump starter with 18 Ah battery

Outputs for 12 volts as well as 4.5 volts, 6 volts, 9 volts

USB port

Integrated work lamp

Storage compartment for accessories

Compact, functional, handy

Contents, specifications and availability are subject to change serving the technical improvement.

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A compact power pack

230 volts AC for air conditioners and more

Plenty of power: with a continuous output of 3.5 kilowatts the BLUTEC 40D will easily supply two self-contained air conditioners. Quartz precision technology delivers a pure sine wave voltage of exactly 230 V AC/50 Hz – ideal for sensitive electronic appliances. Useful extra function: the generator can also be used for charging the starter battery.

BLUTEC 40D is one of the most compact water-cooled diesel generators on the marine market, so you will easily find a place for it on board. Enclosed in an insulated stainless steel housing, the robust unit stands up to the rigours of the sea and keeps noise levels down to an absolute minimum. All functions are easy to manage by remote control. The illuminated display keeps you informed about all important operating parameters.

- 3.5 kW continuous output [e.g. for two high-capacity air conditioners]
- Pure sine wave voltage – suitable for sensitive electrical appliances
- Parallel use of two BLUTEC 40D units possible
- Additional output for charging the starter battery
- Low weight, small foot-print
- Robust design in stainless steel housing
- Low noise level [54 db]
- Comfortable remote control
- Illuminated digital display visualises all important operating parameters
- High operating safety with integrated alarm functions

Dometic BLUTEC 40D

3.39

6.1-kW diesel generator for 230 volts alternating current

Output voltage	230 volts AC/50 Hz
Continuous output	3500 watts
Peak output	4000 watts
Engine output	4.5 kW [6.1 HP]
Fuel	Diesel
Consumption	1.3 l/h
Noise level	54 db [A]
Insulation class	H
Oil capacity	1.1 l
Dimensions [W x H x D]	570 x 528 x 406 mm
Weight	85 kg
Quality features	Remote control, noise-insulated stainless steel housing, additional 12-volt output for DC appliances and battery charging, automatic low-oil cut-off, protected against overload, short circuit and over-voltage
Test mark	CE

NEW

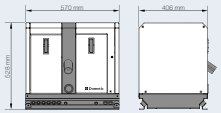
High continuous output

Suitable as a power source for Dometic air conditioners

Very compact unit

User-friendly digital control panel

Diesel fuel



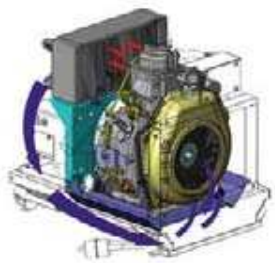
Scope of delivery:
Generator, remote control, illuminated display, mounting kit with filter, exhaust silencer, seacock, operating manual

Product	Ref. No.
Dometic BLUTEC 40D	9102900034
Essential accessory: installation kit for fitting the unit below or above the waterline	9102900035

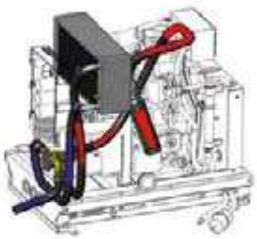
Diesel generator

BLUTEC 40D uses a heavy-duty YANMAR diesel engine which assures many years of reliable operation. The hood has two openings, which provides easy access for service like oil and air filter change. By the use of a smart mechanical gear, the integrated water pump operates at a low rpm.

- Water cooling
- Minimal noise level [54 db]
- Small foot-print
- Installation kit for installation over and under sea level



Air cooling circuit



Water cooling circuit

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